comprising 1 to 5 wt% Bi is directly formed as a surface layer before forming the soldered connection of the substrate and the semiconductor device.

D1 Cont

11. (Twice Amended) An electronic device comprising a substrate and a semiconductor device, which are connected with each other by means of a Pb-free solder, the semiconductor device having a lead made of Cu or a Cu alloy on which an Sn-Bi alloy layer comprising about 1 to about 5 wt% Bi is directly formed as a surface layer before forming the soldered connection of the substrate and the semiconductor device.

D2

19. (Twice Amended) An electronic device comprising a substrate and a semiconductor device, which are connected with each other by means of a Pb-free solder, the semiconductor device having a lead made of an Fe-Ni alloy on which an Sn-Bi alloy plating layer comprising 1 to 5 wt% Bi is directly formed as a surface layer before forming the soldered connection of the substrate and the semiconductor device.

D3

43. (Amended) An electronic device which comprises a first electrode provided on an electronic component and a second electrode formed on a circuit board, the both electrodes being electrically connected with each other by means of a solder-containing portion, wherein an Sn-Bi alloy layer containing 1 to 5 wt% Bi is directly formed on the first electrode, as a surface layer, prior to forming the solder-containing portion, and the Sn-Bi alloy layer is in contact with a Pb-free solder, prior

D4

to forming the solder-containing portion, the solder-containing portion being made from the Pb-free solder.

78. (Amended) An electronic device comprising:

a semiconductor device having an electrode structure which comprises a lead and a Sn-Bi alloy layer containing 1-5 wt% Bi which is formed directly on the lead; and

D5

a circuit board which is connected to the semiconductor device with a solder which is made of Pb-free alloy,

wherein the Sn-Bi alloy layer is formed directly on the lead prior to connecting the semiconductor device to the circuit board with said solder, and

wherein the connection is formed by contacting and soldering the Sn-Bi alloy layer and the solder.

83. (Amended) An electronic device comprising:

a semiconductor device having an electrode structure which comprises a lead and a Sn-Bi alloy layer containing 1-5 wt% Bi which is formed directly on the lead;

D6

and

a circuit board which is connected to the semiconductor device with a solder which is made of a Pb-free alloy,

wherein the Sn-Bi alloy layer is formed directly on the lead prior to connecting the semiconductor device to the circuit board with said solder, and

wherein the connection is formed by soldering during which the solder is initially in contact with the Sn-Bi alloy and subsequently melted, whereby the Sn-Bi is melted and mixed with the solder under heat from the solder.